

Memo to file

March 16, 2016

From: Casey Pecoraro  
Inventory Registrar

Re: CARR-1472  
SHA Bridge No. 0604000

The following Historic Bridge Inventory form, prepared in 1995 to document the concrete slab bridge carrying MD 496 over Bear Branch, was completed using SHA Bridge No. 6040 (or 06040). The SHA Office of Structures, Remedial Section, later changed the formatting of bridge numbers from five-digits to seven or nine-digits (Anne Bruder, personal communication, June 26, 2015).

SHA Bridge No. 6040 corresponds with SHA Bridge No. 0604000.

MARYLAND INVENTORY OF HISTORIC BRIDGES  
HISTORIC BRIDGE INVENTORY  
MARYLAND STATE HIGHWAY ADMINISTRATION/  
MARYLAND HISTORICAL TRUST

MHT No. CARR-1472

SHA Bridge No. 6040 Bridge name MD 496 over Bear Branch

**LOCATION:**

Street/Road name and number [facility carried] Bear Branch

City/town Bachman Hills Vicinity X

County Carroll

This bridge projects over: Road  Railway  Water  Land

Ownership: State  County  Municipal  Other

**HISTORIC STATUS:**

Is the bridge located within a designated historic district? Yes  No

National Register-listed district  National Register-determined-eligible district

Locally-designated district  Other

Name of district \_\_\_\_\_

**BRIDGE TYPE:**

Timber Bridge \_\_\_\_\_:

Beam Bridge  Truss -Covered  Trestle  Timber-And-Concrete

Stone Arch Bridge \_\_\_\_\_

Metal Truss Bridge \_\_\_\_\_

Movable Bridge \_\_\_\_\_:

Swing  Bascule Single Leaf  Bascule Multiple Leaf

Vertical Lift  Retractable  Pontoon

Metal Girder \_\_\_\_\_:

Rolled Girder  Rolled Girder Concrete Encased

Plate Girder  Plate Girder Concrete Encased

Metal Suspension \_\_\_\_\_

Metal Arch \_\_\_\_\_

Metal Cantilever \_\_\_\_\_

Concrete  \_\_\_\_\_:

Concrete Arch  Concrete Slab  Concrete Beam  Rigid Frame

Other  Type Name \_\_\_\_\_

**DESCRIPTION:**

**Setting:** Urban \_\_\_\_\_ Small town \_\_\_\_\_ Rural  X

**Describe Setting:**

Bridge No. 6040 carries MD 496 over Bear Branch. MD 496 runs east-west while Bear Branch flows north. The structure is located in a rural area surrounded by open fields.

**Describe Superstructure and Substructure:**

This structure is a standard 20' concrete slab bridge built in 1931. It conforms to SHA Standard Detail Sheet 29 for a "standard 20'-0" slab bridge", dated 1930, except for the slab thickness which cannot be confirmed. Bridge No. 6042 is a single span two-lane concrete slab. The superstructure comprises a concrete slab with a 9" bituminous concrete wearing surface and open concrete parapets. The parapets have an articulated coping stone and the endblocks are panelled. The approaches have W-beam guiderails which are attached to the parapets. The substructure consists of concrete abutments and flared wingwalls. The wingwalls are decorated with molded chamfering. The bridge has a clear span of 19'-9 3/4" and a 30 degree skew. The out-to-out width is 30'-9", with a clear width of 27'. The design load is H-20.

The most recent available inspection report is from 1987. It describes the condition of the bridge as follows. The deck is in good condition with spalling and some exposed reinforcement. However, it has shifted 2 1/4" towards the north abutment. The northwest wingwall is out of alignment, cracked, and settling away from the abutment face. The southwest wingwall has also cracked and separated from the abutment. The wingwalls of the east abutment show some cracking and evidence of having broken away.

**Discuss Major Alterations:**

There are no records available which detail repairs/alterations made to this bridge, when they were undertaken, or the extent thereof.

**HISTORY:**

**WHEN was the bridge built (actual date or date range)** 1931  
**This date is:** Actual X Estimated \_\_\_\_\_  
**Source of date:** Plaque \_\_\_\_\_ Design plans \_\_\_\_\_ County bridge files/inspection form \_\_\_\_\_  
**Other (specify)** Maryland State Highway Administration bridge files

**WHY was the bridge built?**

Statewide road improvement programs and local transportation needs

**WHO was the designer?**

State Roads Commission

**WHO was the builder?**

Southern Maryland Construction Company

**WHY was the bridge altered?**

Extent of alterations/repairs unknown

**WAS this bridge built as part of an organized bridge-building campaign?**

Yes. This bridge was constructed as a part of continuing improvements to secondary roads in Maryland.

**SURVEYOR/HISTORIAN ANALYSIS:**

**This bridge may have National Register significance for its association with:**

- A - Events \_\_\_\_\_ B- Person \_\_\_\_\_  
C- Engineering/architectural character \_\_\_\_\_

**Was the bridge constructed in response to significant events in Maryland or local history?**

Reinforced concrete slab bridges are a twentieth century structure type, easily adapted to the need for expedient engineering solutions. Reinforced concrete technology developed rapidly in the early twentieth century with early recognition of the potential for standardized design. The first U.S. attempt to standardize concrete design specifications came in 1903-04 with the formation of the Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers.

Maryland's road and bridge improvement programs mirrored economic cycles. The first road improvement program of the State Roads Commission was a 7 year program, starting with the Commission's establishment in 1908 and ending in 1915. Due to World War I, the period from 1916-1920 was one of relative inactivity; only roads of first priority were built. Truck traffic resulting from war-related factories and military installations generated new, heavy traffic unanticipated by the builders of the early road system. From 1920 to 1929, numerous highway improvements occurred in response to the increase in Maryland motor vehicles from 103,000 in 1920 to 320,000 in 1929, with emphasis on the secondary system of feeder roads which moved traffic from the primary roads built before World War I. After World War I, Maryland's bridge system also was appraised as too narrow and structurally inadequate for the increasing traffic, with plans for an expanded bridge program to be handled by the Bridge Division, set up in 1920. In 1920 under Chapter 508 of the Acts of 1920 the State issued a bond of \$3,000,000.00 for road construction; the primary purpose of these monies was to meet the state obligations involving the construction of rural post roads. The secondary purpose of these monies was to fund [with an equal sum from the counties] the building of lateral roads. The number of hard surfaced roads on the state system grew from 2000 in 1920 to 3200 in 1930. By 1930, Maryland's primary system had become inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930s. Most improvements to local roads waited until the years after World War II.

With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction.

In the early years, there was a need to replace the numerous single lane timber bridges. Walter Wilson Crosby, Chief Engineer stated in 1906, "The general plan has been to replace these [wood bridges] with pipe culverts or concrete bridges and thus forever do away with the further expense of the maintenance of expensive and dangerous wooden structures". Within a few years, readily constructed standardized bridges of concrete were being built throughout the state.

The creation of standard plans and a description of their use was first announced in the 1912-15 Reports of the State Roads Commission whereby bridges spanning up to 36 feet were to use standardized designs.

Published on a single sheet, the 1912 Standard Plans included those structures that were amenable to such an approach: slab spans, (deck) girder spans, box culverts, box bridges, abutments, and piers (State Roads Commission 1912). Slab spans, with lengths of 6 to 16 feet in two foot increments, featured a solid parapet that was integrated into the slab, with a roadway of 22 feet.

In the Report for the years 1916-1919, a revision of the standard plans was noted:

During the four years covered by this report, it has been found necessary to revise our standard plans for culverts and bridges, to take care of the increased tonnage which they have been forced to carry. Army cantonments...increased their operations several hundred per cent, and the brunt of the enormous truck traffic resulting therefrom, was borne by the State Roads of Maryland. In addition to these war activities, freight motor lines from Baltimore to Washington, Philadelphia, New York, and various points throughout Maryland, and the weight of many of these trucks when loaded, was in excess of the loads for which our early bridges were designed (State Roads Commission 1920:56).

Published on separate sheets, the new standard plans (State Roads Commission 1919) for slab bridges reveal that the major changes was an increase in roadway width from 22 feet to 24 feet and a redesign of the reinforcement. The slab spans continued to feature solid parapets integrated into the span. The range of span lengths remained 6 to 16 feet, but the next year (1920) witnessed the issue of a supplemental plan for a 20 foot long slab span (State Roads Commission 1920).

The 1924 standard plans remained in effect until 1930, when the roadway width for all standard plan bridges was increased to 27 feet in order to accommodate the increasing demands of automobile and truck traffic (State Roads Commission 1930). The range of span lengths remained the same, but there were some changes designed to increase load bearing capacities. The reinforcing bars were increased in thickness. Visually, the 1930 design can be distinguished from its predecessors by the pierced concrete railing that was introduced at this time.

**When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?**

Unknown.

**Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?**

No. This bridge is not located in an area which may be eligible for historic designation.

**Is the bridge a significant example of its type?**

No. Bridge No. 6042 is not an exceptional example of a standard SHA bridge design from the 1930s, and the character defining elements are in a deteriorating condition.

**Does the bridge retain integrity of important elements described in Context Addendum?**

No. This bridge appears to have retained the integrity of its original design. However, in the absence of documentation concerning repairs/alterations this supposition cannot be confirmed. In addition, the bridge is in deteriorating condition, and a number of its character defining features are in poor condition.

**Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?**

No. This bridge is not a significant example of work completed by the State Roads Commission.

**Should the bridge be given further study before an evaluation of its significance is made?**

No further evaluation is necessary to determine National Register significance. Although it reflects the state's post World War I expansion of secondary road systems, it is not an exceptional example of its type. However, additional research concerning the history of this bridge and its relationship to the surrounding landscape may be useful in providing a more complete picture of the bridge's background.

**BIBLIOGRAPHY:**

County inspection/bridge files \_\_\_\_\_ SHA inspection/bridge files   X  

Other (list):

**SURVEYOR:**

Date bridge recorded   August 1995  

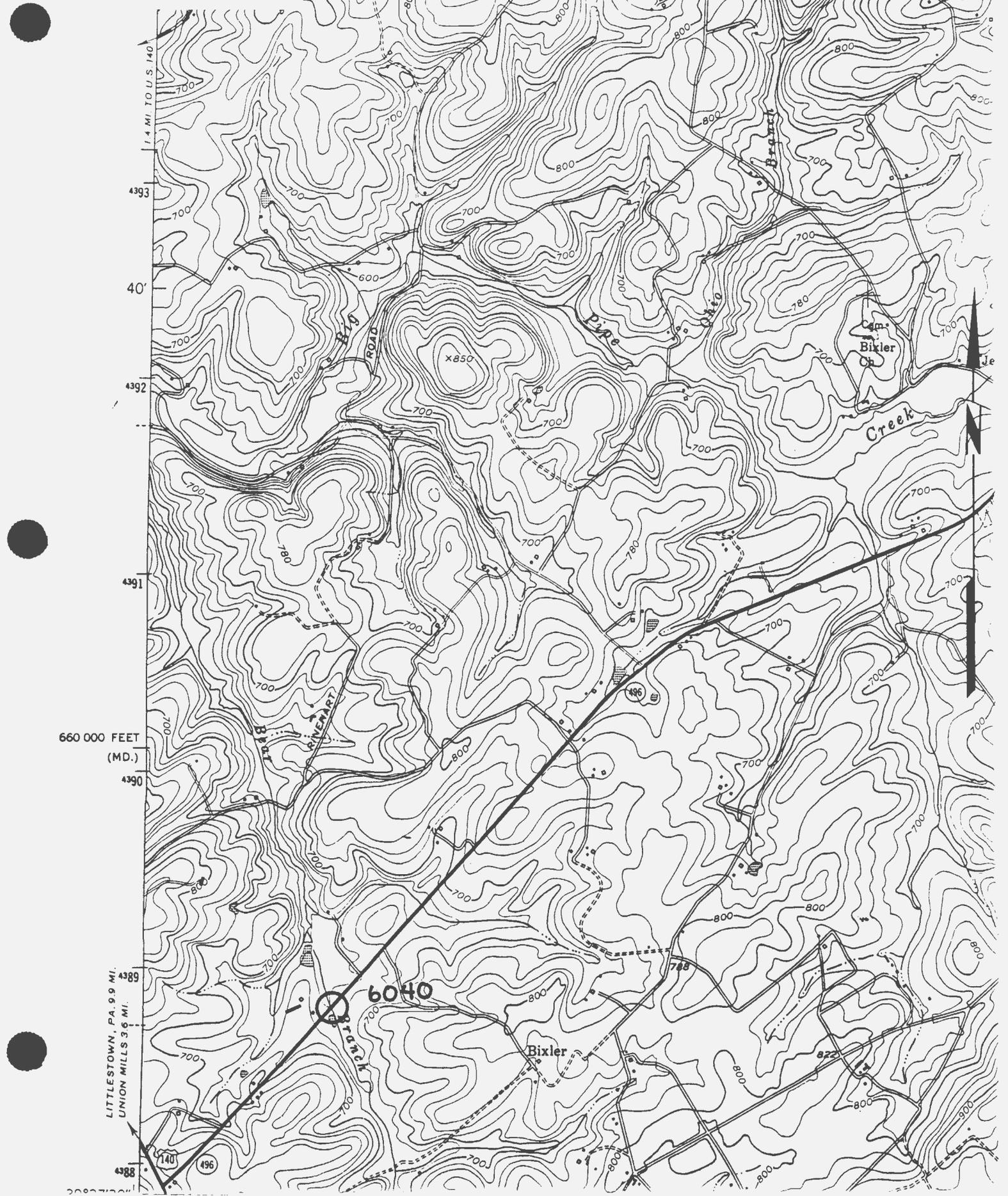
Name of surveyor   Leo Hirrell  

Organization/Address   P.A.C. Spero & Company; 40 West Chesapeake Avenue, Suite 412; Baltimore, Maryland 21204  

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Concrete Slab Bridge Project, 9/95  
Bridge# 6040 County Carroll  
Quad Manchester





Inventory # CARR-1472

6040

Name Md. 496 over Bear Branch

County/State Carroll Co. Md.

Name of Photographer D. Diehl

Date 2-95

Location of Negative SHA

Description east approach looking  
west

Number 1 of 294

11 01 95



BEAR BRANCH

Inventory # CARR-1472

<sup>6040</sup>  
Name md. 496 over Bear Branch

County/State Carroll Co. Md.

Name of Photographer D. Diehl

Date 2-95

Location of Negative SHA

Description west approach looking  
east

Number 2 of 294

12.10.12



Inventory # CARR-1412

6046

Name md 496 over Bear Branch

County/State Carroll Co. Md.

Name of Photographer D. Diehl

Date 2-95

Location of Negative SHA

Description south elevation looking  
north

Number 3 of 299

01.01.95



Inventory # CARR-1472

6040

Name Md. 496 over Bear Branch

County/State Carroll Co. Md.

Name of Photographer D. Diehl

Date 2-95

Location of Negative SHA

Description north elevation looking  
east

Number 4 of 299

01.00